

§ 20.140

analysis of variance or appropriate statistical procedures to include the factors of shot type, dose, and sex. Comparisons between sacrificed birds and birds dying before sacrifice will be made whenever sample sizes are adequate for a meaningful comparison. The applicant will ensure that copies of all the raw data and statistical analyses accompany the report of this test when it is sent to the Director.

Test 3 (Chronic dosage study that includes reproductive assessment using a commercially available duck food diet).

MATERIALS

200 male and 200 female hand-reared mallards that have not been through a reproductive season. These mallards must have plumage and body conformation that resemble wild mallards.

Pens capable of holding 5-10 ducks each.

200 elevated, outdoor pens at least 1-meter square, covered with vinyl-coated wire, and equipped with feeders, waterers and nest boxes.

Laboratory equipped to perform fluoroscopy and required blood assays.

Commercial duck food (developer pellets, breeder pellets, and starter mash).

Lead, steel and candidate shot.

Procedures

Mallards will be randomly assigned to 10 groups (20 males and 20 females/group) in January and held in same-sex groups of 5-10 individuals until mid-February. The mallards will then be randomly paired, within each group, and moved to outdoor pens (one pair per pen). Ducks will be provided with an *ad libitum* diet of commercial developer pellets until initiation of laying, when the pairs will be switched to breeder pellets. Ducks will be sham-dosed (controls) or dosed with three #4 pellets of lead, steel or candidate shot. Dosing will occur using three different dosing schedules: (1) In January; 2 weeks after initiation of the study; (2) at the initiation of laying; and (3) at both times designated in (1) and (2). The single control group will be sham-dosed at both times.

Birds will be fluoroscoped 1 week after dosage to check shot retention, and weighed every 2 weeks. Blood parameters determined in Tests 1 and 2 will be measured again in this test using blood samples drawn at initiation of the study, at time of dosing, at initiation of incubation, and at sacrifice. All birds will be sacrificed when reaching 7 days of age.

Clutches will be candled to determine fertility of the eggs. Nests will be checked daily to determine the fate of eggs and ducklings. Ducklings will be provided with starter mash after hatching.

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Analysis

Any mortality, reproductive inhibition, or effects on the previously mentioned physiological parameters must be significantly less than those caused by lead shot and must not be significantly greater than those caused by steel shot. Physiological and reproductive data will be analyzed by analysis of variance or other appropriate statistical procedures. The applicant will ensure that copies of all raw data and statistical analyses accompany the report of this test when it is sent to the Director.

(Information collection requirements approved by the Office of Management and Budget under control no. 1018-0067)

[51 FR 42100, Nov. 21, 1986]

Subpart M—Criteria and Schedule for Implementing Nontoxic Shot Zones for the 1987-1988 and Subsequent Waterfowl Hunting Seasons

SOURCE: 51 FR 42107, Nov. 21, 1986, unless otherwise noted.

§ 20.140 Purpose and scope.

The regulations of this subpart apply to the designation, implementation and enforcement of nontoxic shot zones for waterfowl hunting in the United States for the 1987-1988 and subsequent hunting seasons. The regulations of this subpart do not apply to the issuance of regulations under part 21 of this title or under subparts A through J and L and N of this part.

§ 20.141 Definitions.

As used in this subpart:

(a) *Nontoxic Shot* means any shot-type that does not cause sickness and death when ingested by migratory birds as determined by criteria established under § 20.134. The only nontoxic shot currently approved by the Director, U.S. Fish and Wildlife Service, is steel shot.

(b) *Nontoxic Shot Zones* means all land and water areas within the boundaries of the United States where the use of nontoxic shot is required for waterfowl hunting. A zone may be all or part of a county designated and/or established for nontoxic shot use.

(c) *Waterfowl* means the Anatidae (ducks, geese [including brant], and swans) and coots (*Fulica americana*).

§ 20.142 Applicability.

This subpart applies to persons of all ages engaged in waterfowl hunting in the established nontoxic shot zones and to all of the boroughs, counties, or parishes within the separate States, without exception. Possession and use of nontoxic shot (including shotshells and loose shot for use in muzzleloading), for all legal gauges of shotguns, is required for waterfowl hunting in nontoxic shot zones. The Secretary of the Interior, acting through the Fish and Wildlife Service, will not open a zone to waterfowl hunting where the Fish and Wildlife Service is prevented from establishing the zone as a nontoxic shot zone under the criteria of this subpart.

§ 20.143 Criteria and schedule for conversion to nontoxic shot.

The criteria and procedures specified below will be followed in the conversion nationwide to the use of nontoxic shot for waterfowl hunting. As of the 1991-1992 season, nontoxic shot will be required in *all* waterfowl hunting in the United States.

(a) Beginning in the 1987-1988 waterfowl hunting season, implementation of nontoxic shot zones is on a decremental basis with regard to the intensity of average annual waterfowl harvest per square mile of a particular county; the initial harvest level triggering monitoring/conversion is 20 or more birds per square mile, decreasing by 5 birds per square mile each successive waterfowl hunting season until the nationwide ban season is reached in 1991-1992. Data on average annual waterfowl harvest are from Carney et al. 1983; data on county size have been obtained from the U.S. Bureau of the Census. Table I illustrates the schedule for conversion to nontoxic shot.

TABLE I.—SCHEDULE FOR MONITORING AND/OR CONVERTING COUNTIES TO NONTOXIC SHOT ZONES FOR HUNTING WATERFOWL

Average annual waterfowl harvest per mi ² * (by county)	Hunting season in which—		
	Monitoring must begin to defer implementation	Qualifying areas converted	Nontoxic shot required in deferred areas
20 or more	1985-86	1987-88	1991-92
15 or more	1986-87	1988-89	1991-92

TABLE I.—SCHEDULE FOR MONITORING AND/OR CONVERTING COUNTIES TO NONTOXIC SHOT ZONES FOR HUNTING WATERFOWL—Continued

Average annual waterfowl harvest per mi ² * (by county)	Hunting season in which—		
	Monitoring must begin to defer implementation	Qualifying areas converted	Nontoxic shot required in deferred areas
10 or more	1987-88	1989-90	1991-92
5 or more	1988-89	1990-91	1991-92
less than 5	1989-90	1991-92	1991-92

* Average harvest is based on Carney et al. 1983 (Distribution of waterfowl species harvested in states and counties during 1971-80 hunting seasons. U.S. Fish and Wildlife Service Special Scientific Report—Wildlife No. 254).

(b) If States, through monitoring, demonstrate during annual Fish and Wildlife Service Regulations Committee meetings that neither of the following two decision criteria are met in a county scheduled for conversion to a nontoxic shot zone, that conversion can be deferred until (but not beyond) the 1991-92 hunting season (monitoring of the latter must include a sample of at least 100 birds of waterfowl species susceptible to lead poisoning):

(1) Dead waterfowl; 3 or more individual specimens confirmed as lead-poisoned during the monitoring year, nor

(2) Ingested shot in gizzards; 5 percent or greater of the sample have gizzards with 1 or more lead shot, and

(i) Liver lead; 5 percent or greater of the sample have livers with concentrations of lead 2 ppm or higher (wet weight), or

(ii) Blood lead; 5 percent or greater of the sample have blood with concentrations of lead 0.2 ppm or higher (wet weight), or

(iii) Protoporphyrin; 5 percent or greater of the sample have blood with protoporphyrin concentrations of 40 ug/dl or higher.

(c) Established nontoxic shot zones will not be eligible for deferral or rescission from conversion in any manner.

(d) There is no deferral past the 1991-1992 nationwide conversion year. States may elect to forgo monitoring and/or otherwise convert to nontoxic shot zones on an accelerated basis, i.e., less than a county, countywide or statewide.